THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering

October 24, 1995

Ms. Linda Elliot, Site Manager
Hazardous Materials Management Division
Department of Environmental Conservation
103 South Main Street
Waterbury, Vermont 05671-0404

Re: Allen's Garage, South Hero, Vermont
DEC Site #951857, JCO #1-1953-4 (054)

Dear Linda:

Following please find the results of laboratory analysis of soil samples collected on September 27, 1995 from the referenced site. The sampling and laboratory analysis were conducted pursuant to your approval letter of September 22, 1995.

SUMMARY

Three soil samples were collected from the north side of Allen's Garage on September 27, 1995 for chemical analysis, to ascertain whether soil removal and enhanced ex-situ biodegradation would be an appropriate remedial mechanism. The results of the laboratory analysis indicate that:

A. none of the metals which were tested for, were reported to be present at concentrations in excess of EPA risk-based standards for industrial sites, nor were any reported metals concentration values outside of published ranges of values for uncontaminated soils;

B. One volatile organic compound (VOC, tetrachloroethylene) was reported from one soil sample closest to the floor drain outlet, at a reported concentration below EPA risk based standards for soils beneath industrial and residential sites;

C. No PCB compounds were reported from any soil sample at concentrations above the method detection limits;

D. Total Petroleum Hydrocarbon concentrations reported in the soil samples ranged from <1 mg/kg to 283 mg/kg.

Based upon these findings, we recommend that some of the soils that presently exist north of the existing building, be removed and treated via enhanced static pile method. The guidance for whether soils are removed should be the DEC's published threshold of 10 ppmV as measured on a photoionization device during a field headspace analysis. Soils which are reported to be contaminated, but which do not exceed 10 ppmV during the field headspace analysis, are proposed to remain in-place. It should be noted that the prospective purchaser of this property proposes to construct a building on a concrete slab over the area in question, and as a result, the residual soils will be covered with and surrounded by concrete structures. This should minimize future environmental exposure of the soils once the building is constructed, but may necessitate health and safety precautions for workers during the excavation and concrete work.

SAMPLE COLLECTION

Three sets of soil samples were collected from the north side of the referenced site by The Johnson Company on September 27. The sampling locations are indicated on the attached Schematic Site Sketch. The intent of the soil sample collection and analysis was to characterize the existing soil conditions in three locations on the north side of the building:

A) immediately adjacent to the floor drain outlet (SS-1);
B) beneath the former junk vehicle storage area (SS-2); and
C) a "background" or uncontaminated location from the vicinity (SS-3).

Each soil sample was collected using a shovel and trowel which were decontaminated before use and between uses.

SAMPLE ANALYSIS

Each soil sample was analyzed for selected metals via matrix digestion (Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Zinc); and for organic compounds (Volatiles via Method 8260; PCBs via Method 8081; and Total Petroleum Hydrocarbons via Modified Method 8100). Samples which were collected for analysis of total metals were delivered to Green Mountain Laboratories, Inc. in Middlesex, Vermont on September 27. Samples which were collected for analysis of organic compounds were delivered via Courier to Analytics Environmental Laboratories Inc. of Portsmouth, New Hampshire on September 29, 1995. Copies of the reports from each of these laboratories are attached.

RESULTS OF SAMPLE ANALYSIS

Table 1 lists the range of laboratory-reported concentrations for each analyte in soil samples. Analytes and compounds which were tested for but which are not listed in the following table, were not reported above detection limits. The appropriate EPA Region III Risk-based industrial site standard and "normal uncontaminated soil" analyte concentration ranges are provided for comparative purposes. Where more than one "normal" range of analyte concentration in soil was available, the most conservative (i.e., narrowest) is provided.

Table 1: Laboratory Reported Analytes and Compounds in Soil Samples Collected on September 27, 1995

Reported Analyte or Compound	SS-1 Reported Concentration (mg/kg unless noted) ppm	SS-2 Reported Concentration (mg/kg unless noted) ppm	SS-3 Reported Concentration (mg/kg unless noted) ppm	Normal Soil Published Range (mg/kg) ppm	EPA Region III Industrial Site Standard (4) (mg/kg) ppm
Arsenic	1.3	0.64	1.0	1-50 (1)	3.3
Barium	100	100	120	100-500 (1)	140,000
Cadmium	0.70	0.44	0.22	0.01-7 (3)	1,000
Chromium	22	13	16	0.02-1,000 (3)	10,000
Copper	58	30	26	5-100 (1)	76,000
Iron	23,000	19,000	15,000	5,000-50,000 (2)	(none)
Lead	<0.005	77	0.83	10-200 (2)	(none)
Zinc	180	120	100	50-300 (2)	610,000
Tetrachloro-ethene	109 ug/kg ppb	< 22 ug/kg	< 26 ug/kg	--	110 mg/kg (12 mg/kg residential)
TPH	81	283	< 1	--	(none)

Footnotes:

1 Reference: Brady, 1974, "The Nature and Properties of Soils", 8th Edition, MacMillan Publishing Company, page 23.
2 Reference: Mason, 1966, "Principles of Geochemistry", 3rd Edition, John Wiley and Sons, page 152.
3 Reference: Bohn, 1979, "Soil Chemistry", John Wiley and Sons, pages 298-299.
4 Reference: USEPA, February 1995, "Region III Risk Based Concentration Tables"

All of the reported inorganic testing results fell within the limits of the published ranges for uncontaminated soils. Additionally, written guidance from the Vermont Department of ~~Environmental~~ Health (see attached memo) recommends an action level for lead in soils of 300 ppm, above which in-place management or interim controls are required. The highest reported lead concentration from these soils is less than 300 ppm, and therefore no action is recommended due to reported lead concentrations.

Also as indicated in Table 1, one VOC (tetrachloroethylene) was reported from sample SS-1 at a concentration of 109 ppb. The state of Vermont presently has no published soil standards for organic compounds, however, the U.S. E.P.A. Region III Risk Based standards are an alternative which had previously been used by the DEC. The Region III soil standards for tetrachloroethylene are 110

mg/kg in industrial settings and 12 mg/kg in residential settings. These standards are three and two orders of magnitude higher, respectively, than is the reported concentration of tetrachloroethylene in SS-1. Also, the reported concentration of tetrachloroethylene in SS-1 would not induce a failing TCLP extraction even if 100% of the compound were extracted during the test (see attached calculations). Given that this concentration is far below the EPA risk-based concentration for this compound in an industrial or residential setting, and that the reported concentration indicates that it could not fail a TCLP test, we recommend that no further action be taken besides the proposed overall remedial action.

RECOMMENDATIONS

Based upon the additional data and information provided by this work, we recommend that the contaminated soils on the north side of the building which exceed the excavation thresholds mentioned above, be excavated and replaced with clean backfill. These soils can be polyencapsulated as provided for in the DEC's "Agency Guidelines for Petroleum Contaminated Soil and Carbon Media". We recommend that an admix of 3 parts soil to 1 part cow manure be placed on and covered with plastic sheeting to provide nutrients, organic matter and bacteria to hasten the bioremediation process. Appropriate samples of excavated and residual soils can be collected before or during the excavation process to provide a baseline for remedial progress. An appropriate pile monitoring schedule and methodology will be created to monitor remedial progress.

Due to the residential surroundings, the probable length of time needed for bioremediation (several years) and the relative lack of available space on-site, we recommend that these soils be polyencapsulated at an off-site location. The Town of South Hero has offered the use of their now-closed landfill site for this soil pile. This site is located in an extremely isolated portion of the Town of South Hero, approximately 1,000 feet from the nearest residence, surface water body or water supply well. This site contains sufficient room for a large soil pile (30' x 40' x 6' deep needed), is not visible from any public right of way or private residence, and offers secured access as well.

Please review this information and do not hesitate to contact me at (802) 229-4600 if you have any questions. If you approve of this course of action, we can prepare a corrective action plan for the site which includes detailed and specific information on the proposed remedial work. Thank you.

Sincerely,

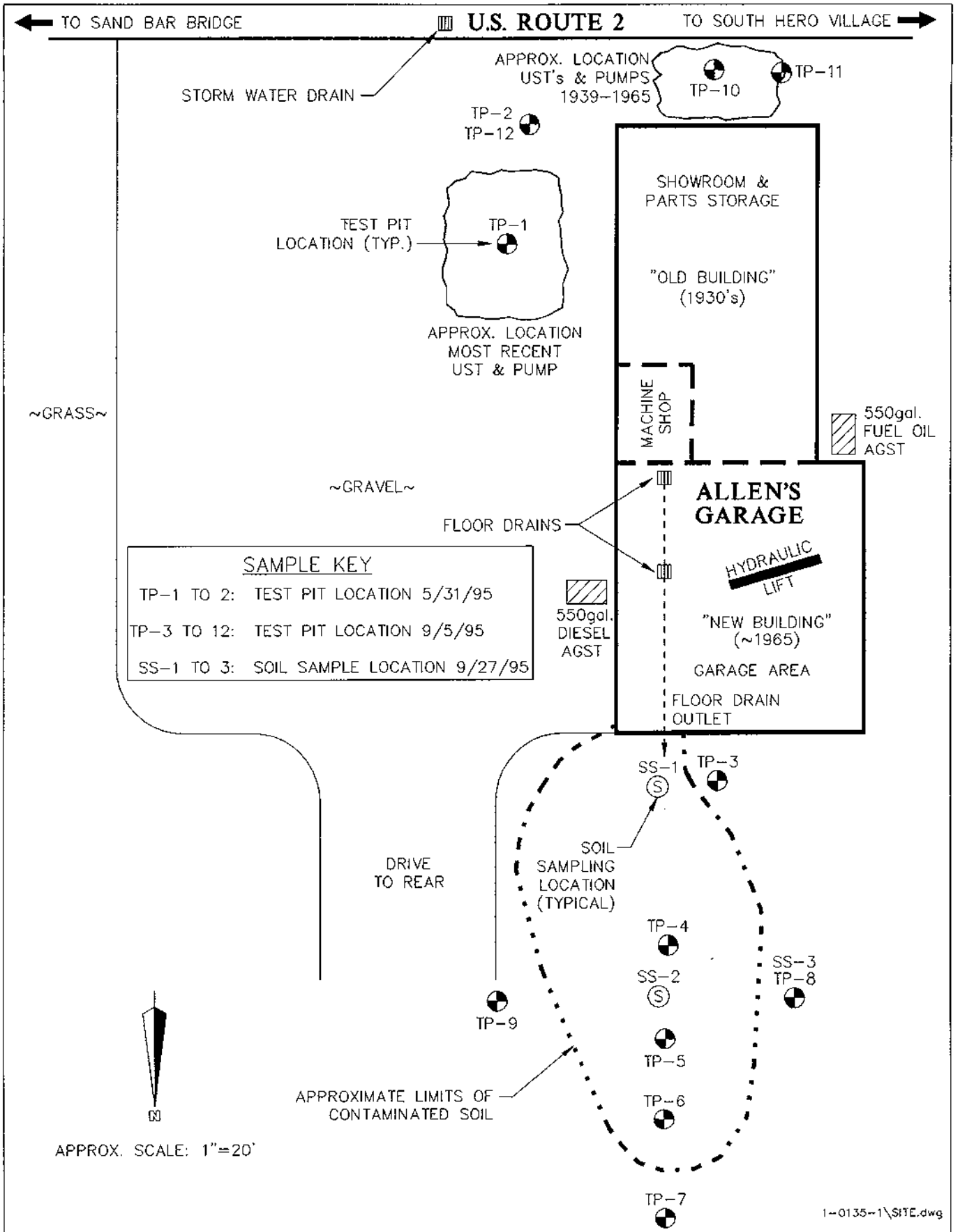
THE JOHNSON COMPANY, INC.

By: _____

Alan R. Liptak
Senior Scientist

Enclosure

cc: Mr. Malcolm Allen, Allen's Garage
Mr. Warren Steadman, Town of South Hero



SCHEMATIC SITE SKETCH
ALLEN'S GARAGE
SOUTH HERO, VERMONT

THE JOHNSON COMPANY, INC.
Environmental Sciences and Engineering
100 STATE STREET MONTPELIER, VT 05602

Green Mountain Laboratories, Inc.

RR#3, Box 5210
Montpelier, Vermont 05602
Phone: (802) 223-1468 Fax: (802) 223-8688

LABORATORY RESULTS

CLIENT NAME:	The Johnson Company	REF#:	0190
ADDRESS:	5 State Street Montpelier, VT 05602	PROJECT #:	na
SAMPLE LOCATION:	Allen's Garage	DATE OF SAMPLE:	9/27/95
SAMPLER:	Alan Liptak	DATE OF SAMPLE RECEIPT:	9/27/95
		DATE OF ANALYSIS:	10/5,9,12 & 13/95
ATTENTION:	Alan Liptak	DATE OF REPORT:	10/19/95

Metals Analysis by AA, flame/ ETA (mg/kg)

Parameter	Date	SS1	SS2	SS3	MDL mg/l	PQL mg/kg
Arsenic	10/19/95	1.3	0.64	1.0	0.005	0.5
Barium	10/19/95	100	100	120	0.01	1.0
Cadmium	10/19/95	0.70	0.44	0.22	0.0005	0.05
Chromium	10/19/95	22	13	16	0.005	0.5
Copper	10/19/95	58	30	26	0.05	5.0
Iron	10/19/95	23,000	19,000	15,000	0.05	5.0
Lead	10/19/95	BPQL	77	0.83	0.005	0.5
Zinc	10/19/95	180	120	100	0.05	5.0

Reviewed By

Althea L. Lindell
Director of Chemistry

analytics environmental laboratory, inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

ARL

Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

Re: Allens Garage, So. Hero Vt. **1-01356-1**

Enclosed are the results of the analyses on your sample(s). Please see individual reports for specific methodologies and references. Samples were received in acceptable condition, with the exeception noted on the chain of custody.

If you have any further question on the analytical methods or these results, do not hesitate to call.

Lab Number	Sample Date	Station Location	Analysis	Comments
35412-1	09/27/95	SS-1	Mod. EPA 8100	
	09/27/95	SS-1	EPA 8081 (PCBs only)	
	09/27/95	SS-1	EPA 8260	
35412-2	09/27/95	SS-2	Mod. EPA 8100	
	09/27/95	SS-2	EPA 8081 (PCBs only)	
	09/27/95	SS-2	EPA 8260	
35412-3	09/27/95	SS-3	Mod. EPA 8100	
	09/27/95	SS-3	EPA 8081 (PCBs only)	
	09/27/95	SS-3	EPA 8260	

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine, and Massachusetts. A list of actual certified tests is available upon request.

Authorized signature

analytics environmental laboratory inc.

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Portsmouth, New Hampshire 03801
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Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-1

SAMPLE DATA

Lab #:	35412-1
Matrix:	Soil
Percent Solid:	75
Dilution Factor:	14
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Analysis Date:	10/02/95

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Vinyl chloride	28	ND	1,2-Dichloroethane	28	ND
1,1-Dichloroethene	28	ND	1,1,1-Trichloroethane	28	ND
cis-1,2-Dichloroethene	28	ND	1,1,2-Trichloroethane	28	ND
trans-1,2-Dichloroethene	28	ND	1,1,1,2-Tetrachloroethane	28	ND
Trichloroethene	28	ND	1,1,2,2-Tetrachloroethane	28	ND
Tetrachloroethene	28	109	Chlorobenzene	28	ND
Chloromethane	28	ND	Benzene	28	ND
Methylene chloride	28	ND	Toluene	28	ND
Chloroform	28	ND	Ethylbenzene	28	ND
Carbon tetrachloride	28	ND	o-Xylene	28	ND
Bromodichloromethane	28	ND	m,p-Xylene	28	ND
Dibromochloromethane	28	ND	Methyl t-butyl ether	28	ND
Bromoform	28	ND	o-Dichlorobenzene	28	ND
Chloroethane	28	ND	m-Dichlorobenzene	28	ND
1,1-Dichloroethane	28	ND	p-Dichlorobenzene	28	ND

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8260."

Authorized signature

analytics environmental laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

October 5, 1995

Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-1

SAMPLE DATA

Lab #:	35412-1
Matrix:	Soil
Percent Solid:	75
Dilution Factor:	14
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Analysis Date:	10/02/95

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
1,2-Dichloropropane	28	ND	Dichlorodifluoromethane	28	ND
cis-1,3-Dichloropropene	28	ND	Trichlorofluoromethane	28	ND
trans-1,3-Dichloropropene	28	ND	Styrene	28	ND
n-Butylbenzene	28	ND	Naphthalene	28	ND
sec-Butylbenzene	28	ND	Bromobenzene	28	ND
tert-Butylbenzene	28	ND	Bromochloromethane	28	ND
2-Chlorotoluene	28	ND	Bromomethane	28	ND
4-Chlorotoluene	28	ND	1,2-Dibromo-3-chloropropane	28	ND
Isopropylbenzene	28	ND	1,2-Dibromoethane	28	ND
4-Isopropyltoluene	28	ND	Dibromomethane	28	ND
n-Propylbenzene	28	ND	1,3-Dichloropropane	28	ND
1,2,3-Trichlorobenzene	28	ND	2,2-Dichloropropane	28	ND
1,2,4-Trichlorobenzene	28	ND	1,1-Dichloropropene	28	ND
1,2,4-Trimethylbenzene	28	ND	Hexachlorobutadiene	28	ND
1,3,5-Trimethylbenzene	28	ND	1,2,3-Trichloropropane	28	ND

Surrogate Standard Recovery

d4-1,2-Dichloroethane	77 %	d8-Toluene	79 %	Bromofluorobenzene	90 %

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8260."

COMMENTS: **Results are expressed on a dry weight basis.**

Authorized signature

analytics environmental laboratory inc.

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Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-2

SAMPLE DATA

Lab #:	35412-2
Matrix:	Soil
Percent Solid:	92
Dilution Factor:	11
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Analysis Date:	10/02/95

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Vinyl chloride	22	ND	1,2-Dichloroethane	22	ND
1,1-Dichloroethene	22	ND	1,1,1-Trichloroethane	22	ND
cis-1,2-Dichloroethene	22	ND	1,1,2-Trichloroethane	22	ND
trans-1,2-Dichloroethene	22	ND	1,1,1,2-Tetrachloroethane	22	ND
Trichloroethene	22	ND	1,1,2,2-Tetrachloroethane	22	ND
Tetrachloroethene	22	ND	Chlorobenzene	22	ND
Chloromethane	22	ND	Benzene	22	ND
Methylene chloride	22	ND	Toluene	22	ND
Chloroform	22	ND	Ethylbenzene	22	ND
Carbon tetrachloride	22	ND	o-Xylene	22	ND
Bromodichloromethane	22	ND	m,p-Xylene	22	ND
Dibromochloromethane	22	ND	Methyl t-butyl ether	22	ND
Bromoform	22	ND	o-Dichlorobenzene	22	ND
Chloroethane	22	ND	m-Dichlorobenzene	22	ND
1,1-Dichloroethane	22	ND	p-Dichlorobenzene	22	ND

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8260."

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Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-2

SAMPLE DATA

Lab #: 35412-2
Matrix: Soil
Percent Solid: 92
Dilution Factor: 11
Collection Date: 09/27/95
Lab Receipt Date: 09/29/95
Analysis Date: 10/02/95

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
1,2-Dichloropropane	22	ND	Dichlorodifluoromethane	22	ND
cis-1,3-Dichloropropene	22	ND	Trichlorofluoromethane	22	ND
trans-1,3-Dichloropropene	22	ND	Styrene	22	ND
n-Butylbenzene	22	ND	Naphthalene	22	ND
sec-Butylbenzene	22	ND	Bromobenzene	22	ND
tert-Butylbenzene	22	ND	Bromochloromethane	22	ND
2-Chlorotoluene	22	ND	Bromomethane	22	ND
4-Chlorotoluene	22	ND	1,2-Dibromo-3-chloropropane	22	ND
Isopropylbenzene	22	ND	1,2-Dibromoethane	22	ND
4-Isopropyltoluene	22	ND	Dibromomethane	22	ND
n-Propylbenzene	22	ND	1,3-Dichloropropane	22	ND
1,2,3-Trichlorobenzene	22	ND	2,2-Dichloropropane	22	ND
1,2,4-Trichlorobenzene	22	ND	1,1-Dichloropropene	22	ND
1,2,4-Trimethylbenzene	22	ND	Hexachlorobutadiene	22	ND
1,3,5-Trimethylbenzene	22	ND	1,2,3-Trichloropropane	22	ND

Surrogate Standard Recovery

d4-1,2-Dichloroethane	81 %	d8-Toluene	86 %	Bromofluorobenzene	95 %

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8260."

COMMENTS: Results are expressed on a dry weight basis.

Authorized signature

Analytics environmental laboratory inc.

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Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
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October 5, 1995

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-3

SAMPLE DATA

Lab #:	35412-3
Matrix:	Soil
Percent Solid:	80
Dilution Factor:	13
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Analysis Date:	10/02/95

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Vinyl chloride	26	ND	1,2-Dichloroethane	26	ND
1,1-Dichloroethene	26	ND	1,1,1-Trichloroethane	26	ND
cis-1,2-Dichloroethene	26	ND	1,1,2-Trichloroethane	26	ND
trans-1,2-Dichloroethene	26	ND	1,1,1,2-Tetrachloroethane	26	ND
Trichloroethene	26	ND	1,1,2,2-Tetrachloroethane	26	ND
Tetrachloroethene	26	ND	Chlorobenzene	26	ND
Chloromethane	26	ND	Benzene	26	ND
Methylene chloride	26	ND	Toluene	26	ND
Chloroform	26	ND	Ethylbenzene	26	ND
Carbon tetrachloride	26	ND	o-Xylene	26	ND
Bromodichloromethane	26	ND	m,p-Xylene	26	ND
Dibromochloromethane	26	ND	Methyl t-butyl ether	26	ND
Bromoform	26	ND	o-Dichlorobenzene	26	ND
Chloroethane	26	ND	m-Dichlorobenzene	26	ND
1,1-Dichloroethane	26	ND	p-Dichlorobenzene	26	ND

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8260."

Authorized signature

analytics environmental laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
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Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-3

SAMPLE DATA

Lab #: 35412-3
Matrix: Soil
Percent Solid: 80
Dilution Factor: 13
Collection Date: 09/27/95
Lab Receipt Date: 09/29/95
Analysis Date: 10/02/95

ANALYTICAL RESULTS VOLATILE ORGANICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg	COMPOUND	Detection Limit: µg/kg	Result: µg/kg
1,2-Dichloropropane	26	ND	Dichlorodifluoromethane	26	ND
cis-1,3-Dichloropropene	26	ND	Trichlorofluoromethane	26	ND
trans-1,3-Dichloropropene	26	ND	Styrene	26	ND
n-Butylbenzene	26	ND	Naphthalene	26	ND
sec-Butylbenzene	26	ND	Bromobenzene	26	ND
tert-Butylbenzene	26	ND	Bromochloromethane	26	ND
2-Chlorotoluene	26	ND	Bromomethane	26	ND
4-Chlorotoluene	26	ND	1,2-Dibromo-3-chloropropane	26	ND
Isopropylbenzene	26	ND	1,2-Dibromoethane	26	ND
4-Isopropyltoluene	26	ND	Dibromomethane	26	ND
n-Propylbenzene	26	ND	1,3-Dichloropropane	26	ND
1,2,3-Trichlorobenzene	26	ND	2,2-Dichloropropane	26	ND
1,2,4-Trichlorobenzene	26	ND	1,1-Dichloropropene	26	ND
1,2,4-Trimethylbenzene	26	ND	Hexachlorobutadiene	26	ND
1,3,5-Trimethylbenzene	26	ND	1,2,3-Trichloropropane	26	ND

Surrogate Standard Recovery

d4-1,2-Dichloroethane	86 %	d8-Toluene	90 %	Bromofluorobenzene	102 %

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample analysis was conducted according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8260."

COMMENTS: Results are expressed on a dry weight basis.

Authorized signature

analytics environmental laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-1

Lab #: 35412-1
Matrix: Soil
Percent Solid: 75
Dilution Factor: 1.3
Collection Date: 09/27/95
Lab Receipt Date: 09/29/95
Extraction Date: 10/02/95
Analysis Date: 10/02/95

TOTAL PETROLEUM HYDROCARBON ANALYSIS

Sample	Result	Units	Detection Limit
35412-1	**81**	mg/kg	1

Surrogate Standard Recovery

m-Terphenyl	73 %

Methodology: Water samples prepared by Separatory Funnel Liquid/Liquid Extraction, "Test Methods for Evaluating Solid Waste," Method 3510; other matrices prepared by Sonication Extraction, "Test Methods for Evaluating Solid Waste," Method 3550.

All matrices were analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8100."

Comments: **Results expressed on a dry weight basis. Quantitation performed based on a No. 2 Fuel Oil standard.**

Authorized signature _____

analytics environmental laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-2

Lab #: 35412-2
Matrix: Soil
Percent Solid: 92
Dilution Factor: 1.1
Collection Date: 09/27/95
Lab Receipt Date: 09/29/95
Extraction Date: 10/02/95
Analysis Date: 10/02/95

TOTAL PETROLEUM HYDROCARBON ANALYSIS

Sample	Result	Units	Detection Limit
35412-2	283	mg/kg	1

Surrogate Standard Recovery

m-Terphenyl	* %

Methodology: Water samples prepared by Separatory Funnel Liquid/Liquid Extraction, "Test Methods for Evaluating Solid Waste," Method 3510; other matrices prepared by Sonication Extraction, "Test Methods for Evaluating Solid Waste," Method 3550.

All matrices were analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8100."

Comments: **Results expressed on a dry weight basis. Quantitation performed based on a No. 2 Fuel Oil standard. *Surrogate recovery affected by sample matrix.**

Authorized signature

analytics environmental laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111 Fax 603-430-2151
800-929-9906

Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

October 5, 1995

Client Project: Allens Garage, So. Hero Vt.

Project Number: 1-0135-1
Station ID: SS-3

Lab #:	35412-3
Matrix:	Soil
Percent Solid:	80
Dilution Factor:	1.2
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Extraction Date:	10/02/95
Analysis Date:	10/02/95

TOTAL PETROLEUM HYDROCARBON ANALYSIS

Sample	Result	Units	Detection Limit
35412-3	ND	mg/kg	1

ND denotes none detected.

Surrogate Standard Recovery

m-Terphenyl	69 %

Methodology: Water samples prepared by Separatory Funnel Liquid/Liquid Extraction, "Test Methods for Evaluating Solid Waste," Method 3510; other matrices prepared by Sonication Extraction, "Test Methods for Evaluating Solid Waste," Method 3550.

All matrices were analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8100."

Comments: **Results are expressed on a dry weight basis.**

Authorized signature _____

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October 5, 1995

Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.
Project Number: 1-0135-1
Station ID: SS-1

SAMPLE DATA

Lab #:	35412-1
Matrix:	Soil
Percent Solid:	75
Dilution Factor:	1.3
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Extraction Date:	10/02/95
Analysis Date:	10/04/95

ANALYTICAL RESULTS POLYCHLORINATED BIPHENYLS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
PCB-1016	65	ND
PCB-1221	65	ND
PCB-1232	65	ND
PCB-1242	65	ND
PCB-1248	65	ND
PCB-1254	65	ND
PCB-1260	65	ND
PCB-1262	65	ND

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	112%
Decachlorobiphenyl	131%

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample was analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8081."

COMMENTS: **Results are expressed on a dry weight basis.**

Authorized signature

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October 5, 1995

Mr. Alan Liptak
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.
Project Number: 1-0135-1
Station ID: SS-2

SAMPLE DATA

Lab #:	35412-2
Matrix:	Soil
Percent Solid:	92
Dilution Factor:	1.1
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Extraction Date:	10/02/95
Analysis Date:	10/04/95

ANALYTICAL RESULTS POLYCHLORINATED BIPHENYLS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
PCB-1016	55	ND
PCB-1221	55	ND
PCB-1232	55	ND
PCB-1242	55	ND
PCB-1248	55	ND
PCB-1254	55	ND
PCB-1260	55	ND
PCB-1262	55	ND

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	97%
Decachlorobiphenyl	90%

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample was analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8081."

COMMENTS: **Results are expressed on a dry weight basis.**

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October 5, 1995

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The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

CLIENT SAMPLE ID

Client Project: Allens Garage, So. Hero Vt.
Project Number: 1-0135-1
Station ID: SS-3

SAMPLE DATA

Lab #:	35412-3
Matrix:	Soil
Percent Solid:	80
Dilution Factor:	1.2
Collection Date:	09/27/95
Lab Receipt Date:	09/29/95
Extraction Date:	10/02/95
Analysis Date:	10/04/95

ANALYTICAL RESULTS POLYCHLORINATED BIPHENYLS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
PCB-1016	60	ND
PCB-1221	60	ND
PCB-1232	60	ND
PCB-1242	60	ND
PCB-1248	60	ND
PCB-1254	60	ND
PCB-1260	60	ND
PCB-1262	60	ND

Surrogate Standard Recovery

2,4,5,6-Tetrachloro-m-xylene	90%
Decachlorobiphenyl	133%

ND=None Detected <=Less than >=Greater than

METHODOLOGY: Sample was analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8081."

COMMENTS: **Results are expressed on a dry weight basis.**

Authorized signature

State of Vermont

AGENCY OF HUMAN SERVICES

VERMONT DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
108 Cherry Street, P.O. Box 70
Burlington, Vermont 05402
Telephone: (802) 863-7220

MEMORANDUM

TO: Peter Marshall, Chief
Management and Prevention Section

FROM: Karen Garbarino, Manager
Childhood Lead Poisoning Prevention Program

DATE: August 10, 1994

RE: Lead in soil

It was a pleasure meeting you at the New England Lead Coordinating Committee meeting in Boston last week.

I met with Bob O'Grady, Environmental Health Division Director, Bill Bress, State Toxicologist, and Karen Crampton, Asbestos/Lead Certification Program, yesterday to discuss implementing the EPA soil guidance issued last month. We have decided to change our "action level" of 300 ppm to EPA's guidance level of 400 - 5000 ppm. We will recommend in-place management or interim controls for soils in the 400 - 5000 ppm range. We will advise those who wish to remove soil with levels exceeding 5000 ppm to assume the soil is hazardous and dispose of it accordingly. Those who wish to remove soil with lead levels below 5000 ppm will be advised to have a TCLP performed to determine if the soil needs to be treated as hazardous. Homeowners are exempt from any disposal requirements or regulations. ?!

I am in the process of re-writing our Lead in Soil Fact Sheet, and will send you a copy for review prior to having it printed.

Thank you for your help.

cc: Bob O'Grady, Division Director
Bill Bress, State Toxicologist
Chris Vollaro, CLPPP
John Mazzucco, CLPPP
Karen Crampton, Asbestos/Lead Certification

Post-It™ brand fax transmittal memo 7671	# of pages ▸ 1
To ALAN LIPCATE	From M. SMITH
Co. The Johnson Co	Co. VT DEC
Dept.	Phone # 241-3849
Fax # 229-5876	Fax #

THE JOHNSON CO., INC.
100 State Street, Suite 600
MONTPELIER, VERMONT 05602
(802) 229-4600

JOB Allen's Garage, So Hero Vt 1-0135-1
SHEET NO. 1 OF 1
CALCULATED BY APL DATE 10-24-95
CHECKED BY _____ DATE _____
SCALE _____

Calculate TCLP potential concentration SS-1

Reported perchlorethylene concentration = 109 ug/kg

$$TCLP = \frac{100\ g\ sample}{2000\ ml\ fluid} \rightarrow \text{Assume 100\% extraction}$$

$$\frac{109\ ug}{1\ kg} = \frac{10.9\ ug}{100\ g} = \frac{10.9\ ug}{2\ l} = \frac{5.5\ ug}{l}$$

TCLP regulatory threshold for Tetrachloroethylene is 700 ug/l

∴ Value 100x less than TCLP Threshold